

REMARKS

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow. This amendment adds, changes and/or deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending the claims as set forth above, claims 1 and 4-10 are now pending in this application. Claim 1 is currently being amended. Claim 10 is being added. Element (e) that has been previously added to claim 1 has been moved to new dependent claim 10. No new matter was added.

Claims 1, 4-6 and 9 are rejected under 35 U.S.C. § 102(b) as being anticipated by Kim (U.S. 5,472,781). This rejection is respectfully traversed.

I. Claim 1, element (c)

Applicants respectfully submit that Kim does not teach or suggest element (c) of claim 1. Element (c) recites a monofilament linear density of 5 dtex or less. The Office Action asserts that this value is inherent in the fiber of Kim. Applicants respectfully disagree.

Applicants believe that fibers of specific examples 1-20 and comparative examples 1-10 of Kim have a monofilament density of 5.79 dtex, which is outside the range recited in claim 1 of the present application. Applicants calculate the monofilament linear density of the fiber of examples 1-20 and comparative examples 1-10 of Kim according to the information provided in column 17, lines 3-15 of Kim, which states that in the melt spinning, a spinneret having 192 holes was used and a final polyester yarn with a fineness of 1000 total denier was produced. Therefore, $1000 \text{ d} / 192 \text{ f} = 5.21 \text{ d} = 5.79 \text{ dtex}$. Thus, a monofilament linear density of 5 dtex or less is not inherent in the fibers of Kim.

In order to establish anticipation by inherency, the PTO must establish that the alleged inherent result must necessarily occur in the prior art product or process. MPEP 2112; *In re King*, 231 USPQ 136 (Fed. Cir. 1986); *Ex Parte Levy*, 17 USPQ2d 1461, 1464 (BPAI 1990). Since the monofilament linear density of the fibers of the examples of Kim is 5.79 dtex, it cannot inherently be equal to five or less.

II. Claim 1, element (d)

Applicants respectfully submit that Kim does not teach or suggest element (d) of claim 1. Kim is silent on the condition recited in element (d) of claim 1. Kim does not teach or suggest that the main dispersion peak temperature of loss tangent ($\tan \delta$) in the measurement of dynamic viscoelasticity at 110 Hz should be less than or equal to 147.0°C. The Office Action states that the range recited in element (d) of claim 1 is inherent. Applicants respectfully disagree.

On page 5 of a previous Office Action mailed on 4/9/2003, the examiner stated that since “both applicant and the Kim reference use polyethylene terephthalate at 90 mol % or higher repeating unit and an intrinsic viscosity of 0.85 dl/g or higher to make a polyester fiber and therefore, would be expected to exhibit the same physical properties such as ... main dispersion peak temperature of loss tangent in the measurement of dynamic viscoelasticity at 110 Hz \leq 147.0°C.” Applicants respectfully disagree.

Applicants respectfully direct the examiner’s attention to Table 1 on page 15 of the present specification. Table 1 shows that for comparative examples 1, 3 and 4 (columns 6, 8 and 9), the main dispersion peak temperature of loss tangent in the measurement of dynamic viscoelasticity at 110 Hz was greater than 147.0°C, even though polyethylene terephthalate at 90 mol % or higher repeating unit and an intrinsic viscosity of 0.85 dl/g or higher (see row 7 of Table I) was used to make the polyester fiber. Thus, the peak temperature in element (d) recited in claim 1 of the present application depends on how the fiber was processed, as explained in example 1 and comparative examples 1, 3 and 4 of the present application, rather

than just on simply using polyethelene terephthalate at 90 mol % or higher repeating unit and an intrinsic viscosity of 0.85 dl/g or higher to make the fiber.

In order to establish anticipation by inherency, the PTO must establish that the alleged inherent result must necessarily occur in the prior art product or process. MPEP 2112; *In re King*, 231 USPQ 136 (Fed. Cir. 1986); *Ex Parte Levy*, 17 USPQ2d 1461, 1464 (BPAI 1990). As explained in the previous paragraph above, the main dispersion peak temperature of loss tangent in the measurement of dynamic viscoelasticity at 110 Hz of Kim is not necessarily less than or equal to 147.0°C using the logic set forth in the previous Office Action. The Office Actions mailed in the present application have not established that the above recited range in element (d) in claim 1 must necessarily occur in the fiber of Kim or that the process of Kim would necessarily result in a fiber having a property range recited in element (d) of claim 1. Thus, the range recited in element (d) of claim 1 is not inherent in the fiber of Kim.

II. Claim 4

Applicants submit that claim 4 is patentable for the same reason as claim 1 as well as for an additional reason.

Claim 4 recites a polyester fiber having a strength x (breaking elongation)^{0.5} ≤ 23.0 cN/dtex.%^{0.5}. Applicants believe that the closest value of strength x (breaking elongation)^{0.5} disclosed in Kim is that of Example 4 in Table 1 and that of Comparative Example 6 in Table 2 of Kim. Applicants believe that the value of strength x (breaking elongation)^{0.5} in Example 4 in Table 1 of Kim 23.3 cN/dtex.%^{0.5}, which is outside the range of 23 cN/dtex.%^{0.5} or less recited in claim 4 of the present application.¹

¹ Applicants calculate the value of strength x (breaking elongation)^{0.5} disclosed in Example 4 in Table 1 of Kim as follows. For the polyester fibers of Example 4 of Kim, the tenacity (or strength) and elongation (or breaking strength) are 7.3 g/d and 13.2%, respectively. The value of 7.3 g/d can be converted into 6.4 cN/dtex, since 1 g/d = 0.8826 cN/dtex. Furthermore, 6.4 cN/dtex. x (13.2)^{0.5} = 23.3 cN/dtex.%^{0.5}.

Applicants believe that the value of strength x (breaking elongation)^{0.5} in comparative example 6 in Table 2 of Kim is less than 23.0 cN/dtex.%^{0.5}. However, claim 4 also requires that the fiber strength ≥ 6.0 cN/dtex, as recited in element (a) of claim 1, and that the fiber linear density is ≤ 5 dtex, as recited in element (c) of claim 1. In contrast, applicants believe that the strength of the fiber of comparative example 6 of Kim is 5.47 cN/dtex² and that the monofilament density of the fiber of comparative example 6 of Kim is 5.79 dtex, as discussed above. Thus, the fiber of comparative example 6 of Kim fails to meet elements (a) and (c) of claim 1.

Applicants believe that that the value of strength x (breaking elongation)^{0.5} in other examples and comparative examples of Kim³ is higher than 23.3 cN/dtex.%^{0.5}. Thus, all examples of Kim except comparative example 6 disclose fibers having a strength x (breaking elongation)^{0.5} greater than 23.0 cN/dtex.%^{0.5}. Thus, all examples excluding comparative example 6 of Kim fail to meet the limitation of claim 4 of the present application. However, comparative example 6 of Kim fails to disclose a fiber which meets limitations (a) and (c) of claim 1, which also limit claim 4. Thus, Kim fails to teach a fiber which meets all limitations of claim 4.

The Office Action alleges that the strength x (breaking elongation)^{0.5} that is recited in claim 4 is inherent in the fiber Kim. Applicants respectfully disagree. In order to establish anticipation by inherency, the PTO must establish that the alleged inherent result must necessarily occur in the prior art product or process. MPEP 2112; *In re King*, 231 USPQ 136 (Fed. Cir. 1986); *Ex Parte Levy*, 17 USPQ2d 1461, 1464 (BPAI 1990). The Office Action has not established that the above recited strength x (breaking elongation)^{0.5} in claim 4 must necessarily occur in the fiber of Kim. As described above, all fibers of the examples of Kim except one have a strength x (breaking elongation)^{0.5} which is higher than 23. Furthermore, Kim does not disclose or enable forming a fiber which simultaneously has a strength x

² The strength of the fiber of comparative example 6 is calculated by converting the tenacity (i.e., strength) of 6.2 g/d in Table 2 into 5.47 cN/dtex using the 1 g/d = 0.8826 cN/dtex conversion value.

³ These values may be calculated the same way as for example 4 of Kim, by converting the value of tenacity to cN/dtex and then multiplying this value by the value of elongation.


(breaking elongation)^{0.5} of 23 or less, while still having a strength of at least 6 cN/dtex and a monofilament linear density of at most 5 dtex, as required by claim 1.

III. Conclusion

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested. The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

Respectfully submitted,

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The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.